



Qazvin university of Medical Sciences

Faculty of Health

Thesis Submitted for the degree of M.Sc. in Health Professional

Title

**Redesigned ergonomic laptop desks in conformity with students anthropometric
dimensions of Qazvin University of Medical Sciences**

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Abstract

Background and Objective: Awkward postures while working is as one of the most important risk factors for musculoskeletal disorders and also fit the tables laptop with physical dimensions of user have important role in maintaining the correctly postures and reduce of the incidence musculoskeletal disorders. So, the purpose of this study is the redesign available ergonomic laptop desks in conformity with student's anthropometric dimensions of Qazvin University of Medical Sciences.

Methods: This study experimental-applied was conducted in 1395. In this study, using simple random categorization sampling, 207 people in the first phase of the study with the objective of measuring anthropometric dimensions and 50 people in the second phase with the aim of using laptop desks of male and female students were housed in dormitories. Five anthropometric dimensions including: length of knees, height of knees, height of elbows in the sitting position, elbow-elbow breadth and length of elbow-fingers were measured for design and construction of a new laptop table and estimate the percentage proportion of laptop desks with anthropometric dimensions. In order to assess the physical condition of each person in different workstations used the worksheet RULA. In describing and analyzing the results of Spss version 18 software and statistical tests was used.

Results: The results showed that compare two types of laptop desks available and laptop desk made with students anthropometric dimensions, only 100% are fit in the overall length of the desk. Also, two types of desks available in 3 dimensions anthropometric proportions were above 32%, while the built-in desk 4 dimension the proportion of over 70% was achieved. The results posture assessment method RULA on desk number one, 36% with a final score of 3 and 46% with a final score of 4, the desk number two, 48% with a final score of 3 and 44% with a final score of 4, as well as in the desk made final score 3 and 4, respectively, 54% and 20% was achieved.

Conclusions: desk made it able higher percentage in the four anthropometric dimensions and appropriate a lower percentage at the action levels an ergonomic and better desk than the two available desks. However, more corrective actions are recommended for the desk made to provide comfort, easement, health and productivity of the user

Keyword: laptop desk, Ergonomic, anthropometric, postures, students